

8. WEED HARVESTING PRACTICES - LOWER AVON RIVER

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The purpose of this report is to advise the Board of the current aquatic weed harvesting practises in the Lower Avon River following extraordinary growth patterns after Christmas and criticism of the Council management of the weed in the Avon River.

BACKGROUND

The Board requested a report on the weed management, following a Dallington community walkabout held on 22 March 2003.

Currently, City Care Ltd owns a single boat designed for harvesting aquatic weed. City Care Ltd is required to harvest weed from the Styx, Heathcote and Avon Rivers as well as Horseshoe Lake and some other larger ponds.

The weed typically is slow growing in the cooler months with increasing growth in the warmer summer period. Over recent years the harvesting programme has been to cut the Avon River in October/November and March/April, the Styx River in December/January and May/June, and the Heathcote River in February.

The weed is harvested in each of the rivers to accommodate a different need. The Styx River is cut to control water levels and prevent inundation of low lying farmland, the Heathcote River to improve flood flows, and the Avon River to improve the recreational values. It is critical that the Styx River is cut in early summer and late autumn and the Heathcote River during mid-summer.

Last year \$265,000 was spent on aquatic weed harvesting by machine and \$130,000 was spent on the Avon River from Fitzgerald Avenue to Avondale Bridge. To date this year \$233,000 has been spent on harvesting with \$140,000 being spent on the Avon River.

LEGAL RESPONSIBILITIES

The Legal Services Unit has commented as follows:

The Avon River fits within the definition of "watercourse" in Section 2 of the Christchurch District Drainage Act 1951. Therefore pursuant to Section 36 of the Act, the Avon River is vested in the Council (as the successor to the Drainage Board).

Section 28 sets out the general powers of the Board to maintain watercourses, etc. These powers are permissive. However, Section 35 imposes a mandatory duty on the Board to cause watercourses to be maintained.

Section 35 of the Act provides:

"35. **Board may cause all drains to be kept in good repair** - The Board shall cause all watercourses, drains, or sewers vested in it or under its management to be constructed and kept so as not to be a nuisance or injurious to health, and to be properly cleared, cleansed, and emptied."

The wording of this section is wide enough to impose a duty on the Council to remove the weeds on health and safety grounds unless the Avon River abuts onto private land.

HARVESTING THIS YEAR

The harvesting programme this year has been similar to previous years. However, the growth pattern of the weed this year appears to have been significantly different to other years. There was minimal growth prior to Christmas but this was followed by a period of very rapid growth in late January and early February. As an indicator, during the October cut in the Avon River weekly harvesting yielded between 60 and 90 cubic metres per week whereas the present harvest is about 175 cubic metres per week.

This sudden increase in growth is probably because of a number of factors. These include long periods of high air temperatures, little or no rain over the summer period and very high sunshine hours along with low water levels in the river. The recorded water levels this summer at Pumping Station 205 are some of the lowest that have been recorded.

FUTURE OPTIONS FOR IMPROVING SERVICE

A number of options are being considered for improving the level of service that is provided in all of the rivers. These include:

- Purchasing a second harvesting boat.
- Changing the cutting methods.
- Altering the cutting regime to better suit all of the users' needs.
- Using different methods to control weeds.
- Considering the impacts of new and introduced weeds into the rivers.
- Providing an agreed level of service.

A Second Boat

Discussions are presently ongoing with City Care Ltd over the purchase of a second harvesting boat. The existing boat is working near to its maximum capacity. However, City Care Ltd considers there is not enough work to justify the purchase of a second boat at this time.

A suitable basic harvesting boat will cost \$250,000 to \$300,000. Additional costs on top of this would include a conveyor, two staff, truck, etc and is likely to bring the total cost up to approximately \$400,000.

With the present work available this would increase harvesting rates in the order of 30-40% unless more Council (or out sourced work) could be guaranteed. Unfortunately the harvesting boats that are available at present are specialised boats that are designed for weed harvesting and have limited potential for other use. At the present time the Council could not guarantee extra work for the second boat on an ongoing basis and City Care Ltd has been unable to secure sufficient outwork to justify the purchase.

Different Cutting Methods

Consideration and trials on changing the cutting methods are being undertaken at present. This involves free cutting the weed and collecting the floating weed separately from the cutting operation. This will speed up the cutting operation but does increase the amount of floating material in the river. There will also be some cost implications with this.

Review Cutting Regimes

There is room for some adjustment to the present cutting regime, although the cutting of the Styx River at the optimum time to control the water levels is imperative. At present the timing of cutting is determined by observing the weed growth and programming work around the Styx River which needs to be cut over the December/January period.

Closer observation and understanding of the growth patterns of the weeds and weather patterns that encourage weed growth will assist with predicting weed growth. The National Institute of Water and Atmospheric Research (NIWA) is doing ongoing aquatic weed studies at present and the results of these studies are being passed on to the Council.

Different Control Methods

Different methods of weed control including the use of herbicide, dredging, and biological control (grass carp) have been considered in the past. Following the introduction of the Resource Management Act 1991, the Council adopted a policy of managing its waterways in a more sustainable way. The aquatic weed does create an environment that encourages the river to develop its own ecosystem. Any proposal to use herbicide or a different method of harvesting than that used at present would require a consent to be obtained from Environment Canterbury. This is likely to require an extensive public consultation process. Consents have been obtained in the past for specific weed control; for example, the use of Diquat to control Egeria.

Impacts of New Weeds

The likelihood of new species of aquatic weed being introduced into the waterways is ever present. Already Egeria Densa has been found in the Kerrs Reach area and other locations in the City. In the last three years the Council has spent over \$200,000 controlling this weed. Recent surveys indicate that Egeria is being managed in Kerrs Reach at present but monitoring and precautions will continue. However, other weeds such as Lagrosiphon are present in the Christchurch area and restricting the spread of these weeds is a high priority. A number of other invasive weeds are known to exist in areas outside of Christchurch. If these weeds were to be introduced into Christchurch a specific weed control strategy would need to be developed urgently.

Review of Levels of Service

This is an opportune time to review the levels of service the Council provides in the rivers with respect to aquatic weed control and to develop relationships with the various user groups to understand their needs and requirements. This already occurs in an ad hoc way with a close liaison with the Rowing Association and a number of land owners along the Styx River but there is only limited contact with other groups such as the Arawa Canoe Club, Dragon Boaters, etc.

CONCLUSIONS

With the resources presently available to the Council, control of aquatic weed is very much a balancing act. Ideally a second harvesting boat would allow for more flexibility in the harvesting programme and provide the opportunity for an improved level of service. The purchase of a second boat will impact significantly on the budget. However, actively encouraging City Care Ltd to acquire additional harvesting work would help to offset the extra costs.

Improved liaison between the Parks and Waterways Unit and the user groups is important. This will provide the Parks and Waterways Unit and the clubs with the opportunity to schedule events and maintenance programs to optimise the conditions. It will also provide an opportunity for exchange of information relating to new weeds being introduced to the rivers and control measures that can be established. The Parks and Waterways Unit will contact the user groups and establish this liaison.

The Parks and Waterways Unit will continue the monitoring of the rivers for new and introduced weeds. Information on weed growth patterns and how other authorities around the world deal with these issues will be sourced as well as a close liaison with NIWA and other bio-security groups.

Staff

- Recommendations:**
1. That City Care Ltd be encouraged to purchase a second harvesting boat.
 2. That the Parks and Waterways Unit establish a liaison group with users of the Avon River, including the Rowing Association, the Arawa Canoe Club and the Dragon Boat Association.
 3. That present levels of monitoring of weeds be at least maintained and investigation and information gathering on growth patterns and predicting weed growth be undertaken.

Chairperson's

- Recommendations:**
1. That the abovementioned recommendations be adopted.
 2. That the Parks and Waterways Unit be commended for its prompt, positive and thorough report on this matter.